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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/517,280

06/24/2005

John V. Frangioni

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STRATEGIC PATENTS P.C..  
C/O PORTFOLIOIP  
P.O. BOX 52050  
MINNEAPOLIS, MN 55402

EXAMINER

EVOY, NICHOLAS LANE

ART UNIT

PAPER NUMBER

3768

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DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/517,280	<b>Applicant(s)</b> FRANGIONI, JOHN V.	
	<b>Examiner</b> NICHOLAS L. EVOY	<b>Art Unit</b> 4136	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 November 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/27/2005 and 6/2/2009</u> . | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 101***

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claim 29 rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 29 recites a method which is neither tied to a specific machine or apparatus, nor is there a transformation of a particular article to a different state or thing. (See *In re Bilski*, 545 F.3d 943, 88 USPQ2d 1385 (Fed. Cir. 2008). Claim 29 seeks to claim illuminating an object, capturing a visible light image and a diagnostic image of the object and storing the image, this would seem to cover every diagnostic process that is visually based. (See *Gottschalk v. Benson*, 409 U.S. 63, 71-72, 175 USPQ 673, 676 (1972).

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, 7, 10, 17, 18, 20, 21 and 27 rejected under 35 U.S.C. 102(b) as being anticipated by Sano et al, US Patent Number 5,701,903.

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5. In re claim 1, Sano et al. discloses a system comprising a device that captures photon intensity from an illuminated object, the device being exposed to an image through a filter wheel including one or more filters that selectively pass wavelengths of light to form a visible light image of the object (see Figure 5) and a filter that selectively passes wavelengths of light to form a diagnostic image of the object, the diagnostic image corresponding to emissions from an imaging medium within the object (i.e. a fluoroscopic apparatus that captures a optical image for normal observation and a fluoroscopic image for diagnostic evaluation, see Abstract).

6. In re claim 2, Sano et al. discloses a system comprising a plurality of devices that capture photon intensity from an illuminated object, the devices being exposed to an image through a beam splitter and filters that selectively pass incident photons along a number of paths according to wavelength, each one of the plurality of devices that capture photon intensity being selectively exposed to an image including wavelengths passed along one of the number of paths, at least one of the paths selectively passing wavelengths to form a diagnostic image of the object, the diagnostic image corresponding to emissions from an imaging medium within the object, and at least one of the paths selectively passing wavelengths to form a visible light image of the object (i.e. a fluoroscopic apparatus that utilizes a beam splitter and multiple filters to capture an optical image for normal observation and a fluoroscopic image for diagnostic evaluation, see Abstract).

7. In re claim 7, Sano et al. discloses the system of claim 1, wherein the imaging medium is at least one of a fluorescent dye, a phosphorescent substance, a

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chemoluminescent substance or a scintillant substance (i.e. for use with a fluoroscopic apparatus, see Title).

8. In re claim 10, Sano et al. discloses the system of claim 1, wherein the object is an object within a surgical field (i.e. a fluoroscopic apparatus for use with an endoscopic system or procedure, see Abstract).

9. In re claim 17, Sano et al. discloses the system of claim 1, wherein the diagnostic image is formed from one or more diagnostic wavelengths in the visible light range, the object being illuminated with a light source that is depleted in the diagnostic wavelength range (i.e. an illuminating light that is part of the ocular optical system used for diagnosis, see Abstract).

10. In re claim 18, Sano et al. discloses the system of claim 1, wherein the visible light image and diagnostic image are processed and displayed in a medical imaging system (i.e. an endoscopy system, see Abstract).

11. In re claim 20, Sano et al. discloses the system of claim 1, wherein the medical imaging system includes one or more inputs for controlling at least one of a field of view of the object, a focus of the object, or a zoom of the object (i.e. an ocular optical system Figure 2).

12. In re claim 21, Sano et al. discloses the system of claim 1, wherein the medical imaging system includes a surgical tool (i.e. an endoscope, see Abstract).

13. In re claim 27, Sano et al. discloses a system comprising a solid state device that captures a visible light image of an object under illumination in digital form and a diagnostic image of the object in digital form, the diagnostic image corresponding to an

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intensity of emission from an imaging medium within the object (i.e. the system mentioned above in conjunction with a solid state image pickup device, see Column 3, Lines 41-52 and Abstract).

***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 5-6, 8-9, 11-16, 19, 22-26, 28 and 30-31 rejected under 35 U.S.C. 103(a) as being unpatentable over Sano et al. US Patent Number 5,701,903 in view of Imaizumi et al, US Patent Number 6,293,911 B1.

16. Regarding claims 5 and 6, Imaizumi teaches using CCD's for photo detection (Column 6, Lines 42-50 and Figure 1) and using integrated circuits (Figure 46)

17. Regarding claims 8 and 9, Imaizumi teaches using fluorescent substances that are introduced with an endoscope into a lesion in a deep subcutaneous region inside the body (Column 2, Lines 9-49).

18. Regarding claim 11, Imaizumi teaches using red, green and blue filters to create monochromatic visible light images (Column 16, Lines 60-67 and Figure 12).

19. Regarding claim 12, Imaizumi teaches using red, green and blue CCD's for light detection and image formation (Column 6, Lines 60-67).

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20. Regarding claim 13, Imaizumi teaches using cyan, magenta and yellow wavelengths of light to form the visible light image (Column 25, Lines 9-14).
21. Regarding claim 14, Imaizumi teaches using near-infrared wavelengths to make the diagnostic image (Column 45, Lines 43-49).
22. Regarding claim 15, Imaizumi teaches using infrared wavelengths to make the diagnostic image (Abstract).
23. Regarding claim 16, Imaizumi teaches taking multiple pictures using a light separating means which passes wavelengths of light selectively and at different points in time for diagnostic image acquisition (Column 2, Lines 25-49).
24. Regarding claim 19, Imaizumi teaches superimposing the acquired visible spectrum image with the diagnostic image (Abstract).
25. Regarding claim 22-24, Imaizumi teaches an endoscopy system with an embodiment including a camera that includes multiple image outputs based on multiple wavelengths of illumination (Column 5, Lines 32-57 and Abstract).
26. Regarding claims 25 and 26, Imaizumi teaches a system that captures multiple images and additionally can capture a video signal (Abstract).
27. Regarding claim 28, Imaizumi teaches a system that uses an endoscopy camera to take digital photographs and relay them to an external display system (Abstract and Column 6, Lines 42-50, and Figure 1).
28. Regarding claims 30-31, Imaizumi teaches a system that uses both a beam splitter and a filter wheel to separate wavelengths of light for diagnostic imaging (Column 2, Lines 25-49, and Figure 12).

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29. Regarding claims 5-6, 8-9, 12-16, 19, 22-26, 28 and 30-31, it is noted that Sano does not teach the features disclosed above, however Imaizumi does include the above features. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the fluoroscopic apparatus of Sano with the fluorescent endoscopy system of Imaizumi because both Sano's and Imaizumi's inventions are directed towards dual visualization fluoroscopy/endoscopy systems with Imaizumi's system featuring more modern digital components.

30. Claims 3-4 and 32-34 rejected under 35 U.S.C. 103(a) as being unpatentable over Sano et al. US Patent Number 5,701,903 in view of Imaizumi et al, US Patent Number 6,293,911 B1 further in view of Okada, US Patent Number 6,133,953.

31. Regarding claims 3-4 and 32-34, it is noted that Sano and Imaizumi do not teach capturing the image at a plurality of pixel locations where pixels are covered by wavelength specific filters and include a plurality of diode junctions. However, Okada teaches using a charge coupled device that uses light filters to obtain color information for each pixel on a chip, and utilizes photodiodes to detect photons to form an image (Column 4, Lines 1-33). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the inventions of Sano and Imaizumi with the features of Okada because condensed photodiode technology that uses filtered pixels is a the preferred method for capturing a digital light image, and digital light images are preferable for surgical applications due to their size and ease of use.



***Double Patenting***

32. Claim 33 objected to under 37 CFR 1.75 as being a substantial duplicate of claim 32. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NICHOLAS L. EVOY whose telephone number is (571)270-1388. The examiner can normally be reached on M-F 7:30-5:00, Alternating Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marvin M. Lateef can be reached on (571)270-1493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NLE 7/14/09

/Long V Le/  
Supervisory Patent Examiner, Art Unit 3768